

**Amendments To The Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method of increasing bandwidth utilization of a transmission channel having a first bandwidth capacity and operative at a first transmission rate comprising the steps of:

providing ~~one or more~~ at least two input bit streams each having a transmission rate ~~that does not exceed less than~~ that of said first transmission rate wherein at least one of said ~~one or more~~ at least two input streams has a plurality of overhead bits associated therewith;

dividing said ~~one or more~~ at least two input bit streams into a plurality of sub-streams, each having bandwidth lower than said first bandwidth capacity, wherein the difference between the first bandwidth capacity and a bandwidth capacity of each of the at least two input bit streams is at least equal to the bandwidth of one of the plurality of sub-streams;

selecting a group of sub-streams out of said plurality of sub-streams, which group has a combined bandwidth just lower than said first bandwidth capacity; and wherein

said group comprises at least one sub-stream which comprises at least some of said plurality of overhead bits;

carrying said selected group of sub-streams over said transmission channel; and

assembling said selected group of sub-streams into an output bit stream.

2. (Original) The method of claim 1 wherein said dividing step is performed using an inverse multiplexing technique producing said plurality of subs-streams and overhead bits.

3. (Original) The method of claim 1 wherein said selecting step is performed by determining said group of sub-streams such as to minimize wasted bandwidth of said first bandwidth capacity.

4. (Original) The method of claim 1 wherein said first bandwidth capacity is associated with a DS3 transmission channel, and wherein said input bit streams comprise a plurality of E3 signals, such that in said dividing step, said plurality of E3 signals are each divided into 18 parallel E1 sub-stream signals, and in said selecting step, a group of 21 of said parallel E1 sub-stream signals is selected for transmission over said DS3 transmission channel.

5. (Original) The method of claim 4 wherein seven E3 signals are carried in six DS3 transmission channels.

6. (Original) The method of claim 4 for use in an SDH type of network, wherein an STM1 signal carries three DS3 signals each comprising said selected group of 21 of said parallel E1 sub-stream signals, such that said STM1 signal carries an additional 9 E1 signals for each three DS3 signals carried therein.

7. (Currently Amended) A system for increasing bandwidth utilization of a transmission channel having a first bandwidth capacity and operative at a first transmission rate, said system comprising:

means for providing ~~one or more~~ at least two input bit streams having each having a transmission rate ~~that does not exceed~~ less than that of said first transmission rate wherein at least one of said ~~one or more~~ at least two input streams has a plurality of overhead bits associated therewith;

means for dividing said ~~one or more~~ at least two input bit streams into a plurality of sub-streams, each having a bandwidth lower than said first bandwidth capacity, wherein the difference between the first bandwidth capacity and a bandwidth capacity of each of the at least two input bit

streams is at least equal to the bandwidth of one of the  
plurality of sub-streams;

means for selecting a group of sub-streams out of said plurality of sub-streams, which group has a combined bandwidth just lower than said first bandwidth capacity and wherein said group comprises at least one sub-stream which comprises at least some of said plurality of overhead bits; and

means for assembling said selected group of sub-streams into an output bit stream after said selected group of sub-streams is carried over said transmission channel.

8. (Original) The system of claim 7 wherein said means for dividing said input bit streams into a plurality of sub-streams comprises an inverse multiplexer.